Revised PM Air Quality Standards: September 2006

MA SIP Steering Committee

November 2, 2006

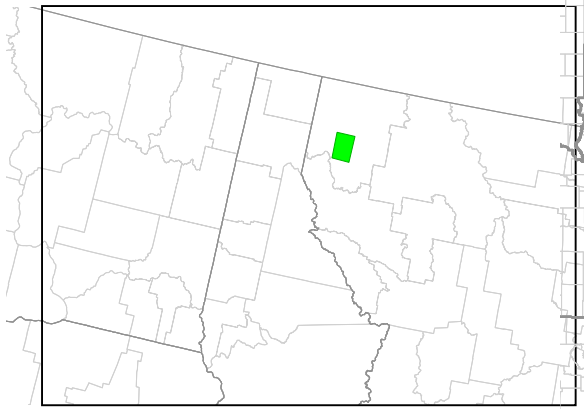
Overview

- What are the current PM (particulate matter) Air Quality Standards?
- What PM Standards were proposed on December 20, 2005?
- What are the final PM Standards?

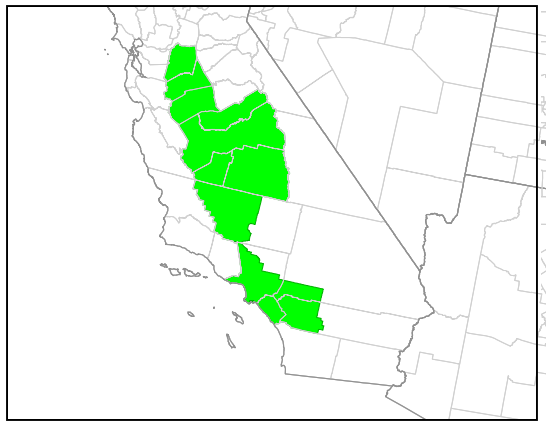
Current PM Standards

- $PM_{2.5}$ standards:
  - 15 µg/m^3, ann. arithmetic mean, max monitor or allowance for spatial average of designated monitors (3-year average).
  - 65 µg/m^3, 24-hour average, 98th percentile concentration (3-year average), max monitor in area.
- PM_{10} standards:
  - 50 µg/m^3, annual arithmetic mean (3-year average).
  - 150 µg/m^3, 24-hour average, 1 expected exceedance/year (3-year average).
  - There are no PM_{10} nonattainment areas in New England

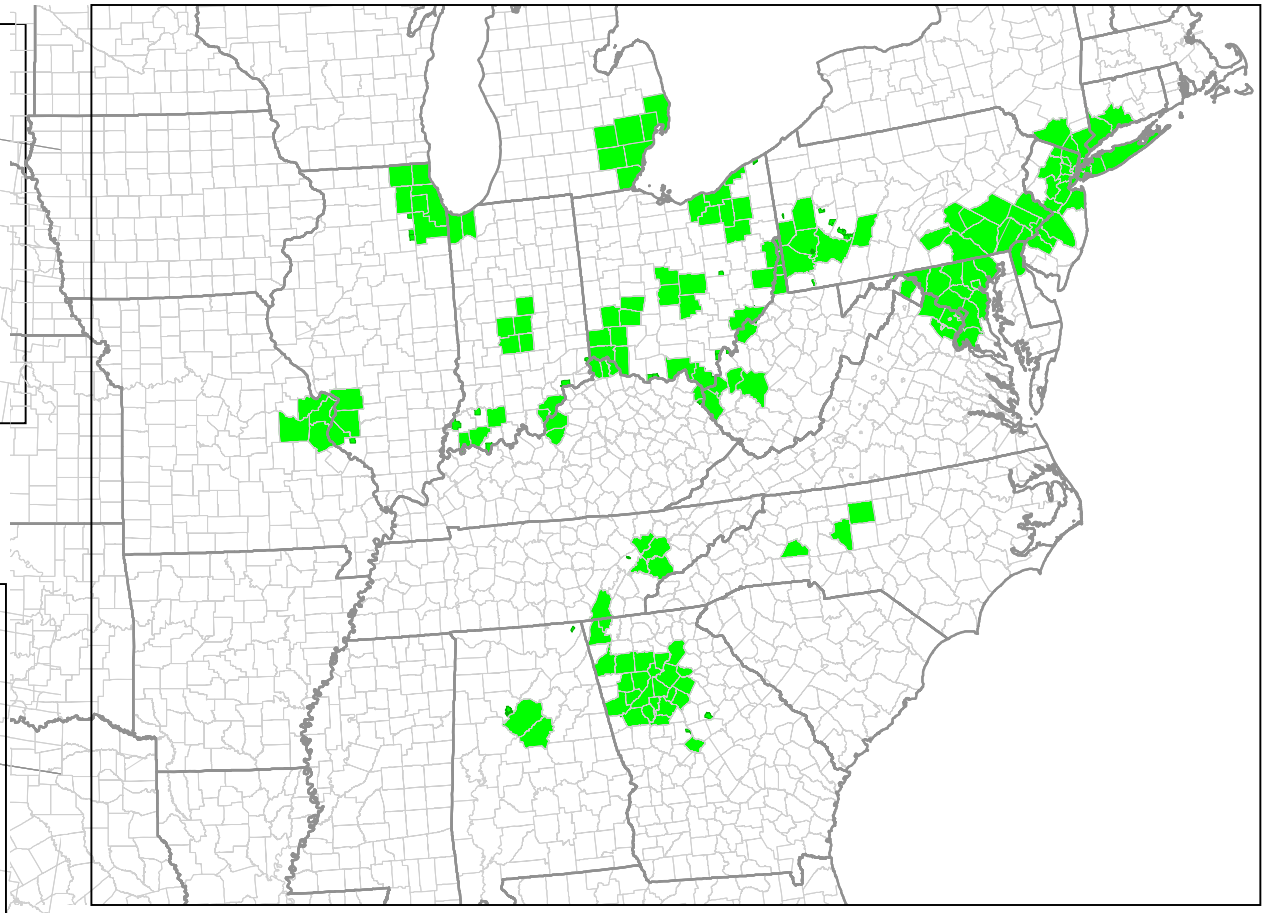
Current $PM_{2.5}$ Nonattainment Areas



Libby, Montana



San Joaquin Valley and Los Angeles



Eastern U.S.

In New England, only Fairfield and New Haven Counties are designated nonattainment.

EPA's December 2005 Proposed PM Standards

Fine Particles:

- Keep annual $PM_{2.5}$ standard: 15 µg/m^3
- Revise 24-hour $PM_{2.5}$ standard: 35 µg/m^3 (98^{th} percentile)
- Consider establishing separate $PM_{2.5}$ standard to address visibility in urban areas in range of 20 to 30 µg/m^3 (averaging times of 4 to 8 daylight hours)

Coarse Particles:

- Consider establishing new indicator for "inhalable" coarse particles ($PM_{10-2.5}$). Propose setting this 24-hour $PM_{10-2.5}$ standard at 70 µg/m^3 ;no annual standard
- Consider eliminating existing PM_{10} standards

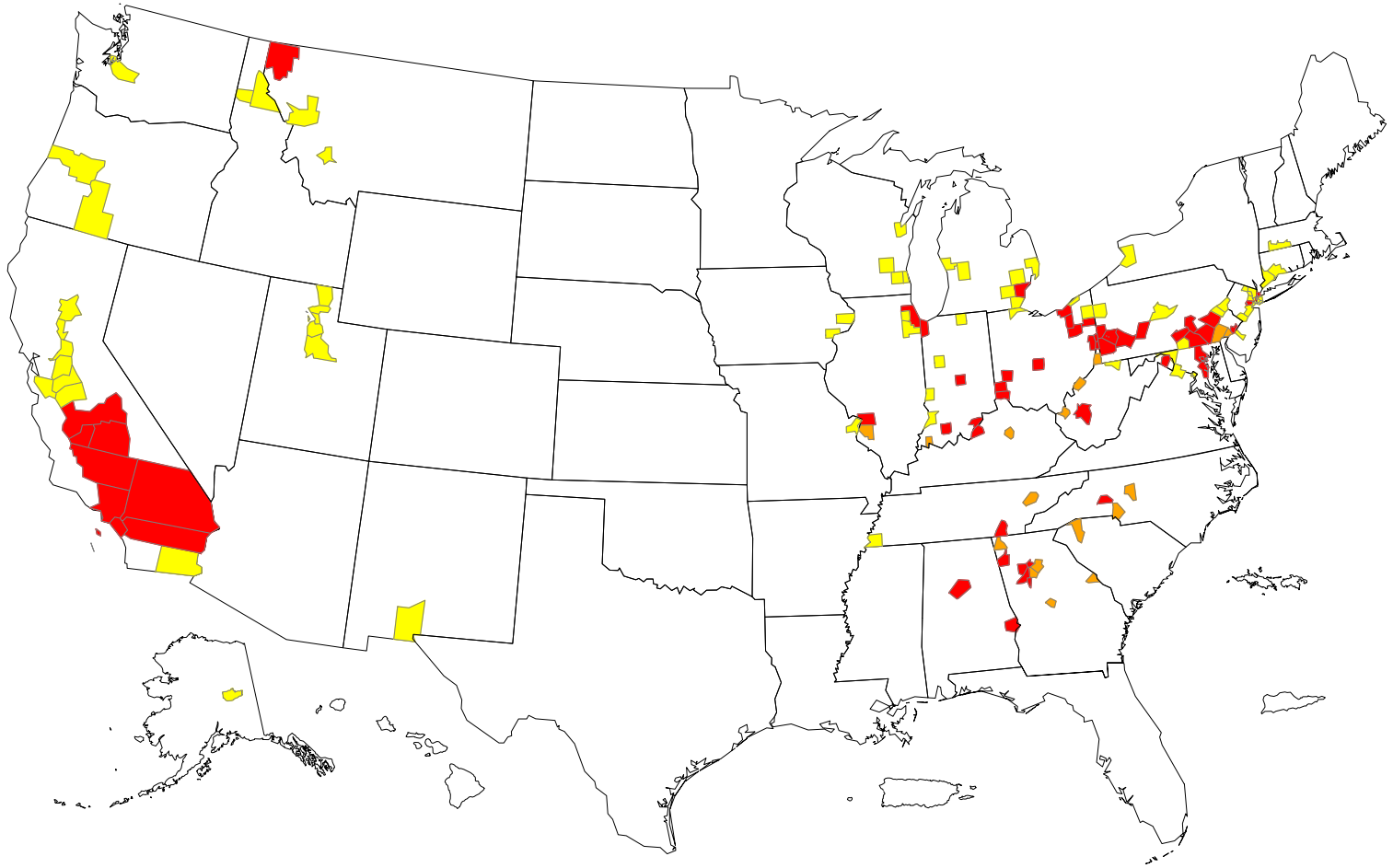
EPA's Sept 2006 Revised PM Standards

- $PM_{2.5}$ standards:
  - Annual standard: *retain* level of 15 µg/m^3, but have more restrictive spatial averaging criteria
  - 24-hour standard: *revise* level down from 65 µg/m^3 to 35 µg/m^3 and retain 98th percentile form
  - Not enough evidence to establish sub-daily 24-hour $PM_{2.5}$ standard to address visibility impairment
- Coarse-particle (PMc) standards:
  - Do not establish $PM_{10-2.5}$ indicator because of questions about national scope and uncertainty about appropriate level
  - *Retain* PM_{10} indicator at 150 µg/m^3 for 24-hour average
  - *Revoke* annual PM_{10} standard due to lack of evidence of long-term effects of PMc

EPA's PM Standards: Old and New

	1997 Standards		2006 Standards	
	Annual	**24-hour**	**Annual**	**24-hour**
PM2.5 (Fine)	**15 µg/m^3** Annual arithmetic mean, averaged over 3 years	**65 µg/m^3** Annual arithmetic mean, averaged over 3 years	**15µg/m^3** Annual arithmetic mean, averaged over 3 years	**35µg/m^3** Annual arithmetic mean, averaged over 3 years
PM10 (Coarse)	**50µg/m^3** Annual average	**150µg/m^3** 24-hr average (99th percentile)	**Revoked**	**150µg/m^3** 24-hr average (singled expected exceedance)

Counties Exceeding New NAAQS Levels, Based on 2003-2005 Monitoring Data



Legend	Number of Counties
County with monitor exceeding:	
both annual and 24-hour PM2.5 standards	55
ONLY the 24-hour PM2.5 standard	69
ONLY the annual PM2.5 standard	17
Total Counties Exceeding	141

- Data from AQS 7/10/2006
- Data completeness computed per CFR 7/10/2006

Impact of Revised PM Standards on New England

- Based on 2003-2005 data, the following counties may not meet a 24-hr standard of 35 µg/m^3 with annual standard of 15 µg/m^3:

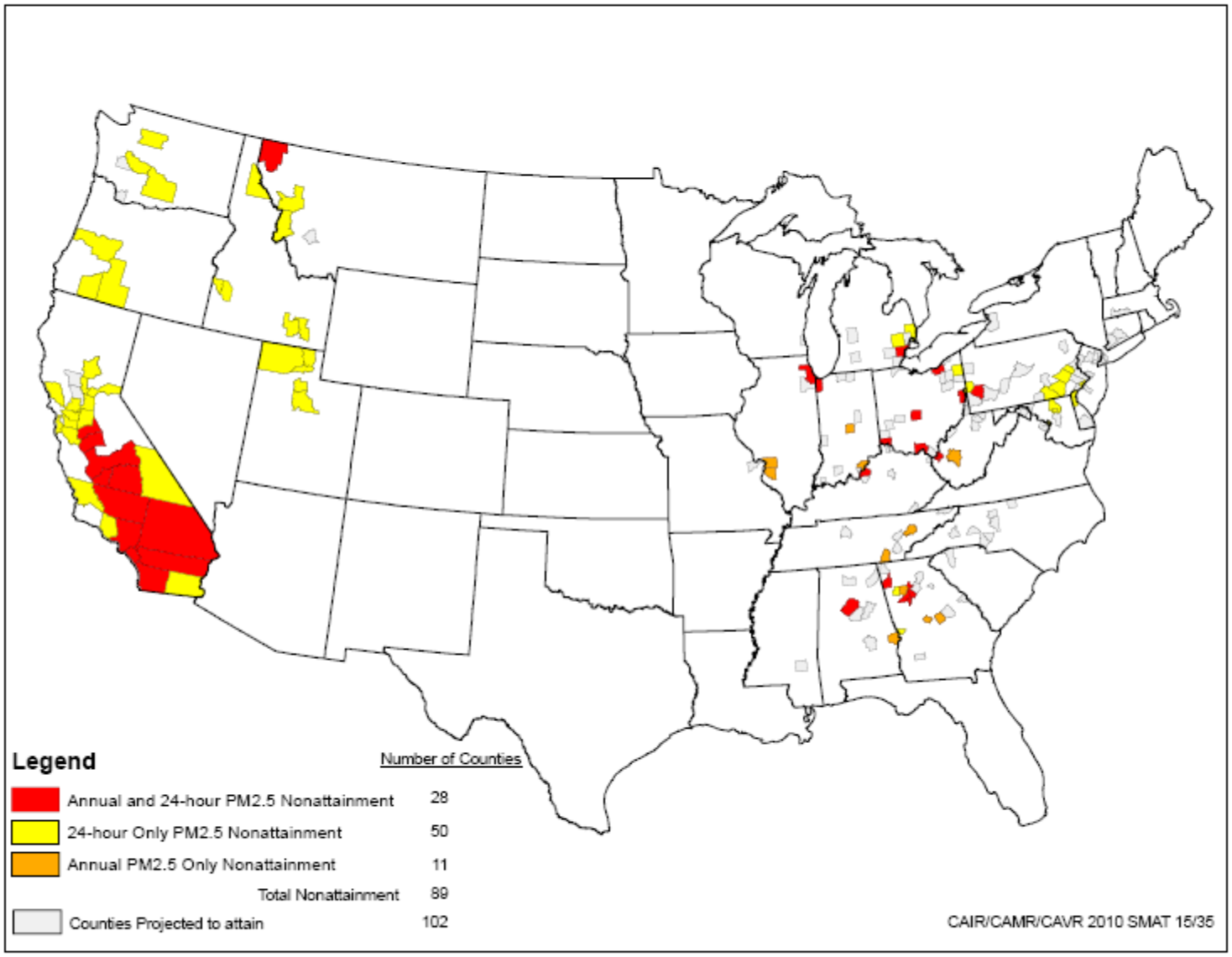
  CT: Fairfield, New Haven

  MA: Hamden

$PM_{2.5}$ Map based on Modeled Future Year Predictions

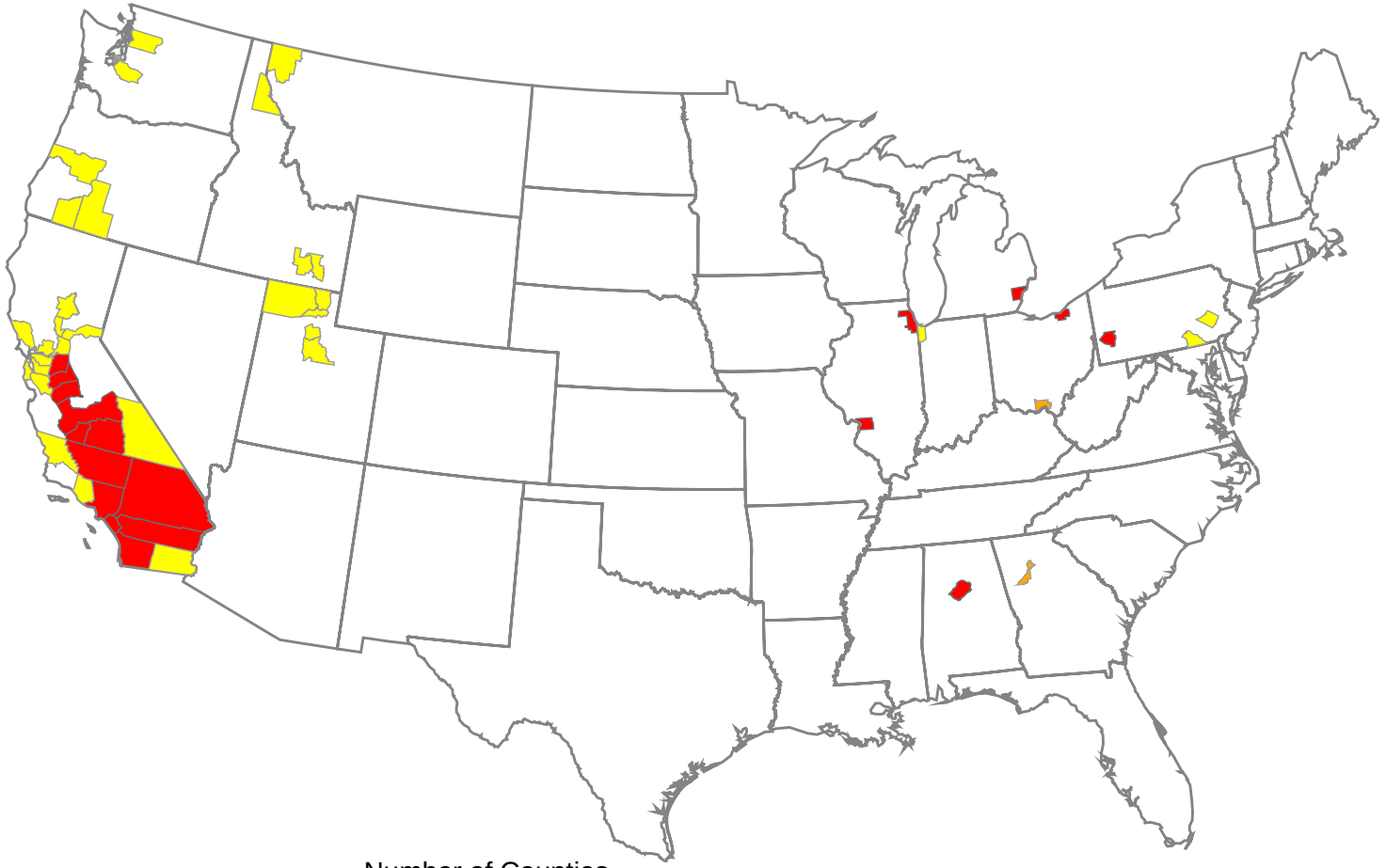
- The next map shows expected $PM_{2.5}$ levels in 2010 with existing Clean Air Act and Clean Air Interstate Rule (CAIR) controls in place.
- Map is for an annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ and a 24-hour standard of 35 $\mu g/m^3$.
- Conclusion: New England states predicted to be in attainment during this time frame.

Counties Projected to Exceed the PM2.5 NAAQS in 2010
Based on EPA Modeling*
Annual **15 ug/m3** and 24-Hour **35 ug/m3**



**EPA models assume implementation of CAIR/CAMR/CAVR, mobile source and other federal rules and existing state programs. Air quality is expected to be better than shown. This approach does not forecast actions states will take to meet current PM standards. Also note that modeled air quality forecasts are subject to a number of uncertainties.*

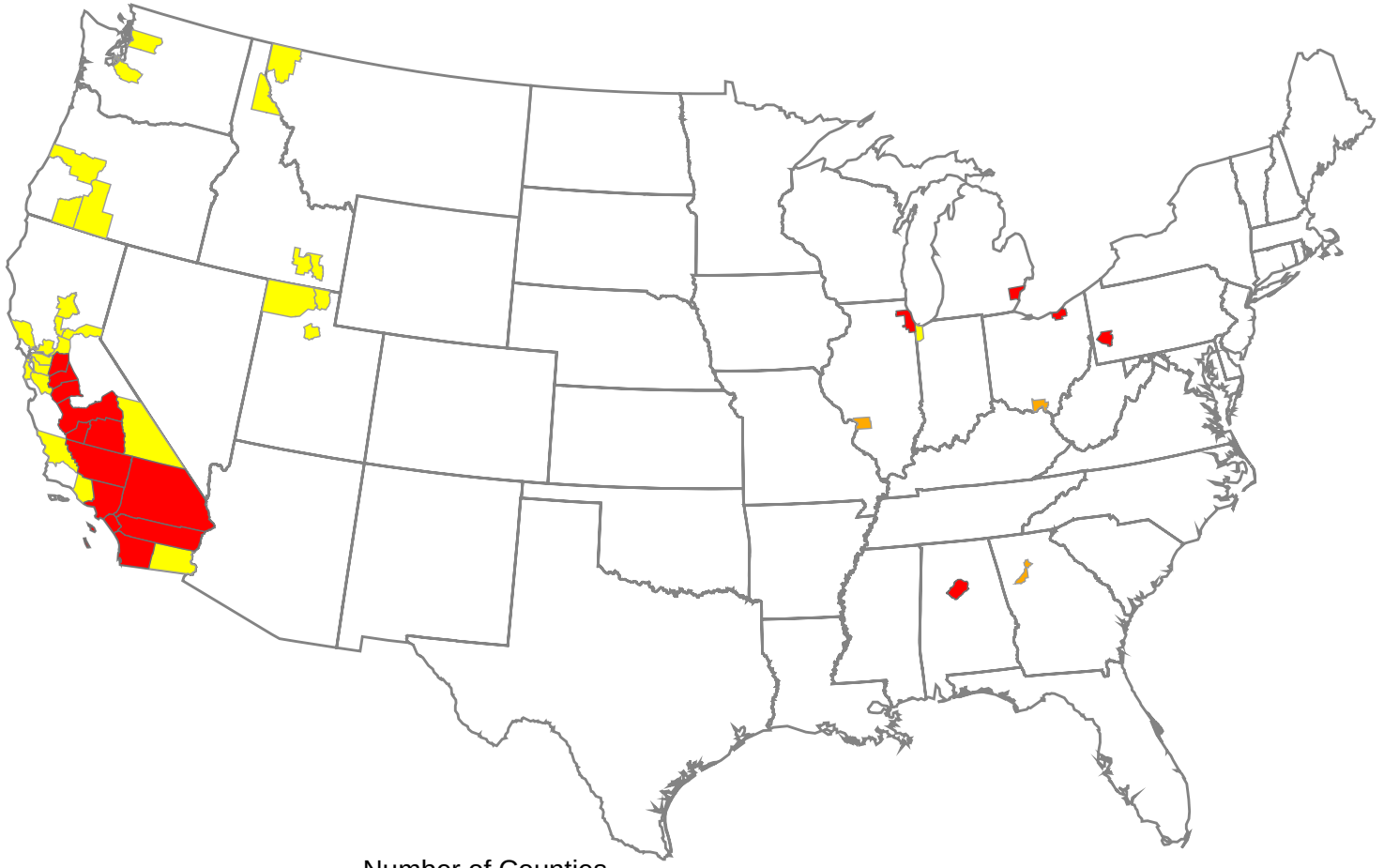
Counties Projected to Exceed the PM2.5 NAAQS in 2015
Based on EPA Modeling*
Annual **15 ug/m3** and 24-Hour **35 ug/m3**



Legend	Number of Counties
County with monitor exceeding:	
both annual and 24-hour PM2.5 standards	18
ONLY the 24-hour PM2.5 standard	32
ONLY the annual PM2.5 standard	2
Total Counties Exceeding	52

*Projections as of September 2006. EPA models assume implementation of CAIR/CAMR/CAVR, Title IV of the Clean Air Act, the NOx SIP Call, and some existing state programs. This approach does not forecast actions states will take to meet current PM standards.

Counties Projected to Exceed the PM2.5 NAAQS in 2020
Based on EPA Modeling*
Annual **15 ug/m3** and 24-Hour **35 ug/m3**



Legend	Number of Counties
County with monitor exceeding:	
both annual and 24-hour PM2.5 standards	17
ONLY the 24-hour PM2.5 standard	28
ONLY the annual PM2.5 standard	3
Total Counties Exceeding	48

*Projections as of September 2006. EPA models assume implementation of CAIR/CAMR/CAVR, Title IV of the Clean Air Act, the NOx SIP Call, and some existing state programs. This approach does not forecast actions states will take to meet current PM standards.

Likely Timeline for Revised $PM_{2.5}$ Standards

Milestone	**Date**
Effective Date of Revised $PM_{2.5}$ Standards	December 2006
State Attainment/ Nonattainment Recommendations to EPA	December 2007 (based on 2004-2006 monitoring data)
Final Designations Signature	December 2009 (Would be based on 2006-2008 data)
Effective Date of Designations	Aprile 2010 (Would allow EPA to account for 2007-2009 data in final designations)
SIPs Due	April 2013
Attainment Date	Aprile 2015 (based on 2012-2014 monitoring data)
Attainment Date with 5-yr Extension	April 2020

For More Information…

- www.epa.gov/air/particles

- EPA Region I contact:

  Alison Simcox (617) 918-1684

  simcox.alison@epa.gov